RAW SEQUENCE LISTING

The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) no errors detected.

Application Serial Number: 10 644,123A
Source: TFW16
Date Processed by STIC: 2-4-05

ENTERED

IFW16

RAW SEQUENCE LISTING   DATE: 02/04/2005
PATENT APPLICATION: US/10/644,123A   TIME: 07:26:30

Input Set : **D:\UF-314XC1.txt**
Output Set: **N:\CRF4\02042005\J644123A.raw**

```
 3 <110> APPLICANT: Richards, Nigel Gordon John
 4        Chang, Christopher Harry
 5        Peck, Ammon B.
 7 <120> TITLE OF INVENTION: Polunucleotides Encoding Oxalate Decarboxylase from
Aspergillus
 8        Niger and Methods of Use
10 <130> FILE REFERENCE: UF-314XC1
12 <140> CURRENT APPLICATION NUMBER: US 10/644,123A
13 <141> CURRENT FILING DATE: 2003-08-20
15 <150> PRIOR APPLICATION NUMBER: US 60/404,892
16 <151> PRIOR FILING DATE: 2002-08-20
18 <160> NUMBER OF SEQ ID NOS: 10
20 <170> SOFTWARE: PatentIn version 3.2
22 <210> SEQ ID NO: 1      \
23 <211> LENGTH: 1397
24 <212> TYPE: DNA
25 <213> ORGANISM: Aspergillus niger
27 <400> SEQUENCE: 1
28 ttaccagcaa ctactgcaga ttcccgcctc atccccatcc attttcttcc aagacaagcc     60
30 attcaccccc gatcatcgcg accccctatga tcacaaggtg gatgcgatcg gggaaggcca    120
32 tgagcccttg ccctggcgca tgggagatgg agccaccatc atgggacccc gcaacaagga    180
34 ccgtgagcgc cagaaccccg acatgctccg tcctccgagc accgaccatg gcaacatgcc    240
36 gaacatgcgg tggagctttg ctgactccca cattcgcatt gaggtaagcc cttcgagagt    300
38 cttgtgtacg acaagcaaaa taggctaatg cactgcagga gggcggctgg acacgccaga    360
40 ctaccgtacg cgagctgcca caagcaggg agcttgctgg agtaaacatg cgccttgatg     420
42 agggtgtcat tcgcgagctg cactggcatc gggaagcaga gtgggcgtat gtgctggccg    480
44 gacgtgtacg agtgactggt cttgacctgg agggaggcag cttcatcgat gacctggaag    540
46 agggtgacct ctggtacttc ccatcgggcc atccccattc acttcagggt ctcagtccta    600
48 atggcaccga gttcttactg atcttcgacg atggaaactt ttccgaggag tcaacgttct    660
50 tgttgaccga ctggatcggt atgtccatca ctatgctgtt gtacaacctc cacaaaaata    720
52 ctaacaatgc tataaaacag cacatacacc caagtctgtc ctcgccggaa acttccgcat    780
54 gcgcccacaa acattcaaga acatcccacc atctgaaaag tacatcttcc agggctctgt    840
56 cccagactct atccccaaag aacttccccg caacttcaaa gcatccaagc agcgcttcac    900
58 gcataagatg ctcgctcaag aacccgagca tacctctggc ggagaggtgc gcatcacaga    960
60 ctcgtccaac tttcccatct ccaagacggt cgcggccgcc cacctgacca ttaacccggg   1020
62 cgctatccgg gagatgcact ggcatcccaa tgcggatgaa tggtcctact ttaagcgcgg   1080
64 tcgggcgcga gtgactatct tcgctgctga aggtaatgct cgtacattcg actacgtagc   1140
66 gggagatgtg ggcattgttc ctcgcaacat gggtcatttc attgagaacc tcagtgatga   1200
68 cgaggaggtc gaggtgttgg aaatcttccg ggcggaccga ttccgggact tttcgttgtt   1260
70 ccagtggatg ggagagacgc cgcagcggat ggtggcagag catgtgttta aggatgatcc   1320
72 agatgcggcc agggagttcc ttaagagtgt ggagagcggg gagaaggatc caattcggag   1380
74 cccaagtgag tagatga                                                   1397
77 <210> SEQ ID NO: 2
78 <211> LENGTH: 1280
```

```
79 <212> TYPE: DNA
80 <213> ORGANISM: Aspergillus niger
82 <400> SEQUENCE: 2
83 ttaccagcaa ctactgcaga ttcccgcctc atccccatcc attttcttcc aagacaagcc      60
85 attcaccccc gatcatcgcg acccctatga tcacaaggtg gatgcgatcg gggaaggcca     120
87 tgagcccttg ccctggcgca tgggagatgg agccaccatc atgggacccc gcaacaagga     180
89 ccgtgagcgc cagaaccccg acatgctccg tcctccgagc accgaccatg caacatgcc      240
91 gaacatgcgg tggagctttg ctgactccca cattcgcatt gaggagggcg gctggacacg     300
93 ccagactacc gtacgcgagc tgccaacaag caaggagctt gctggagtaa acatgcgcct     360
95 tgatgagggt gtcattcgcg agctgcactg gcatcgggaa gcagagtggg cgtatgtgct     420
97 ggccggacgt gtacgagtga ctggtcttga cctggaggga ggcagcttca tcgatgacct     480
99 ggaagagggt gacctctggt acttcccatc gggccatccc cattcacttc agggtctcag     540
101 tcctaatggc accgagttct tactgatctt cgacgatgga aacttttccg aggagtcaac    600
103 gttcttgttg accgactgga tcgcacatac acccaagtct gtcctcgccg aaacttccg     660
105 catgcgccca caaacattca agaacatccc accatctgaa aagtacatct tccagggctc    720
107 tgtcccagac tctatcccca aagaacttcc ccgcaacttc aaagcatcca agcagcgctt    780
109 cacgcataag atgctcgctc aagaacccga gcatacctct ggcggagagg tgcgcatcac    840
111 agactcgtcc aactttccca tctccaagac ggtcgcggcc gcccacctga ccattaaccc    900
113 gggcgctatc cgggagatgc actggcatcc caatgcggat gaatggtcct actttaagcg    960
115 cggtcgggcg cgagtgacta tcttcgctgc tgaaggtaat gctcgtacat tcgactacgt   1020
117 agcgggagat gtgggcattg ttcctcgcaa catgggtcat ttcattgaga acctcagtga   1080
119 tgacgaggag gtcgaggtgt ggaaatctt ccgggcggac cgattccggg acttttcgtt    1140
121 gttccagtgg atgggagaga cgccgcagcg gatggtggca gagcatgtgt ttaaggatga   1200
123 tccagatgcg gccagggagt tccttaagag tgtggagagc ggggagaagg atccgattcg   1260
125 gagcccaagt gagtagatga                                               1280
128 <210> SEQ ID NO: 3
129 <211> LENGTH: 424
130 <212> TYPE: PRT
131 <213> ORGANISM: Aspergillus niger
133 <400> SEQUENCE: 3
135 Tyr Gln Gln Leu Leu Gln Ile Pro Ala Ser Ser Pro Ser Ile Phe Phe
136 1               5                   10                  15
139 Gln Asp Lys Pro Phe Thr Pro Asp His Arg Asp Pro Tyr Asp His Lys
140             20                  25                  30
143 Val Asp Ala Ile Gly Glu Gly His Glu Pro Leu Pro Trp Arg Met Gly
144         35                  40                  45
147 Asp Gly Ala Thr Ile Met Gly Pro Arg Asn Lys Asp Arg Glu Arg Gln
148     50                  55                  60
151 Asn Pro Asp Met Leu Arg Pro Pro Ser Thr Asp His Gly Asn Met Pro
152 65                  70                  75                  80
155 Asn Met Arg Trp Ser Phe Ala Asp Ser His Ile Arg Ile Glu Glu Gly
156             85                  90                  95
159 Gly Trp Thr Arg Gln Thr Thr Val Arg Glu Leu Pro Thr Ser Arg Glu
160             100                 105                 110
163 Leu Ala Gly Val Asn Met Arg Leu Asp Glu Gly Val Ile Arg Glu Leu
164         115                 120                 125
167 His Trp His Arg Glu Ala Glu Trp Ala Tyr Val Leu Ala Gly Arg Val
168     130                 135                 140
171 Arg Val Thr Gly Leu Asp Leu Glu Gly Gly Ser Phe Ile Asp Asp Leu
```

RAW SEQUENCE LISTING   DATE: 02/04/2005
PATENT APPLICATION: US/10/644,123A   TIME: 07:26:30

Input Set : D:\UF-314XC1.txt
Output Set: N:\CRF4\02042005\J644123A.raw

```
172 145                    150                   155                    160
175 Glu Glu Gly Asp Leu Trp Tyr Phe Pro Ser Gly His Pro His Ser Leu
176                    165                   170                    175
179 Gln Gly Leu Ser Pro Asn Gly Thr Glu Phe Leu Leu Ile Phe Asp Asp
180                    180                   185                    190
183 Gly Asn Phe Ser Glu Glu Ser Thr Phe Leu Leu Thr Asp Trp Ile Ala
184            195                   200                   205
187 His Thr Pro Lys Ser Val Leu Ala Gly Asn Phe Arg Met Arg Pro Gln
188        210                   215                   220
191 Thr Phe Lys Asn Ile Pro Pro Ser Glu Lys Tyr Ile Phe Gln Gly Ser
192 225                    230                   235                    240
195 Val Pro Asp Ser Ile Pro Lys Glu Leu Pro Arg Asn Phe Lys Ala Ser
196                    245                   250                   255
199 Lys Gln Arg Phe Thr His Lys Met Leu Ala Gln Glu Pro Glu His Thr
200                    260                   265                   270
203 Ser Gly Gly Glu Val Arg Ile Thr Asp Ser Ser Asn Phe Pro Ile Ser
204            275                   280                   285
207 Lys Thr Val Ala Ala Ala His Leu Thr Ile Asn Pro Gly Ala Ile Arg
208        290                   295                   300
211 Glu Met His Trp His Pro Asn Ala Asp Glu Trp Ser Tyr Phe Lys Arg
212 305                    310                   315                    320
215 Gly Arg Ala Arg Val Thr Ile Phe Ala Ala Glu Gly Asn Ala Arg Thr
216                    325                   330                   335
219 Phe Asp Tyr Val Ala Gly Asp Val Gly Ile Val Pro Arg Asn Met Gly
220            340                   345                   350
223 His Phe Ile Glu Asn Leu Ser Asp Asp Glu Glu Val Glu Val Leu Glu
224            355                   360                   365
227 Ile Phe Arg Ala Asp Arg Phe Arg Asp Phe Ser Leu Phe Gln Trp Met
228        370                   375                   380
231 Gly Glu Thr Pro Gln Arg Met Val Ala Glu His Val Phe Lys Asp Asp
232 385                    390                   395                    400
235 Pro Asp Ala Ala Arg Glu Phe Leu Lys Ser Val Glu Ser Gly Glu Lys
236                    405                   410                   415
239 Asp Pro Ile Arg Ser Pro Ser Glu
240            420
243 <210> SEQ ID NO: 4
244 <211> LENGTH: 409
245 <212> TYPE: PRT
246 <213> ORGANISM: Aspergillus niger
248 <400> SEQUENCE: 4
250 Phe Gln Asp Lys Pro Phe Thr Pro Asp His Arg Asp Pro Tyr Asp His
251 1              5                   10                    15
254 Lys Val Asp Ala Ile Gly Glu Gly His Glu Pro Leu Pro Trp Arg Met
255            20                   25                    30
258 Gly Asp Gly Ala Thr Ile Met Gly Pro Arg Asn Lys Asp Arg Glu Arg
259            35                   40                    45
262 Gln Asn Pro Asp Met Leu Arg Pro Pro Ser Thr Asp His Gly Asn Met
263        50                   55                    60
266 Pro Asn Met Arg Trp Ser Phe Ala Asp Ser His Ile Arg Ile Glu Glu
```

```
267 65                    70                  75                  80
270 Gly Gly Trp Thr Arg Gln Thr Thr Val Arg Glu Leu Pro Thr Ser Arg
271             85                  90                  95
274 Glu Leu Ala Gly Val Asn Met Arg Leu Asp Glu Gly Val Ile Arg Glu
275             100                 105                 110
278 Leu His Trp His Arg Glu Ala Glu Trp Ala Tyr Val Leu Ala Gly Arg
279             115                 120                 125
282 Val Arg Val Thr Gly Leu Asp Leu Glu Gly Gly Ser Phe Ile Asp Asp
283     130                 135                 140
286 Leu Glu Glu Gly Asp Leu Trp Tyr Phe Pro Ser Gly His Pro His Ser
287 145                 150                 155                 160
290 Leu Gln Gly Leu Ser Pro Asn Gly Thr Glu Phe Leu Leu Ile Phe Asp
291             165                 170                 175
294 Asp Gly Asn Phe Ser Glu Glu Ser Thr Phe Leu Leu Thr Asp Trp Ile
295             180                 185                 190
298 Ala His Thr Pro Lys Ser Val Leu Ala Gly Asn Phe Arg Met Arg Pro
299             195                 200                 205
302 Gln Thr Phe Lys Asn Ile Pro Pro Ser Glu Lys Tyr Ile Phe Gln Gly
303     210                 215                 220
306 Ser Val Pro Asp Ser Ile Pro Lys Glu Leu Pro Arg Asn Phe Lys Ala
307 225                 230                 235                 240
310 Ser Lys Gln Arg Phe Thr His Lys Met Leu Ala Gln Glu Pro Glu His
311             245                 250                 255
314 Thr Ser Gly Gly Glu Val Arg Ile Thr Asp Ser Ser Asn Phe Pro Ile
315             260                 265                 270
318 Ser Lys Thr Val Ala Ala Ala His Leu Thr Ile Asn Pro Gly Ala Ile
319             275                 280                 285
322 Arg Glu Met His Trp His Pro Asn Ala Asp Glu Trp Ser Tyr Phe Lys
323     290                 295                 300
326 Arg Gly Arg Ala Arg Val Thr Ile Phe Ala Ala Glu Gly Asn Ala Arg
327 305                 310                 315                 320
330 Thr Phe Asp Tyr Val Ala Gly Asp Val Gly Ile Val Pro Arg Asn Met
331             325                 330                 335
334 Gly His Phe Ile Glu Asn Leu Ser Asp Asp Glu Glu Val Glu Val Leu
335             340                 345                 350
338 Glu Ile Phe Arg Ala Asp Arg Phe Arg Asp Phe Ser Leu Phe Gln Trp
339             355                 360                 365
342 Met Gly Glu Thr Pro Gln Arg Met Val Ala Glu His Val Phe Lys Asp
343     370                 375                 380
346 Asp Pro Asp Ala Ala Arg Glu Phe Leu Lys Ser Val Glu Ser Gly Glu
347 385                 390                 395                 400
350 Lys Asp Pro Ile Arg Ser Pro Ser Glu
351             405
354 <210> SEQ ID NO: 5
355 <211> LENGTH: 21
356 <212> TYPE: DNA
357 <213> ORGANISM: Artificial sequence
359 <220> FEATURE:
360 <223> OTHER INFORMATION: PCR primer
```

RAW SEQUENCE LISTING   DATE: 02/04/2005
PATENT APPLICATION: US/10/644,123A   TIME: 07:26:30

Input Set : D:\UF-314XC1.txt
Output Set: N:\CRF4\02042005\J644123A.raw

362 <400> SEQUENCE: 5
363 gtcctcgaga aaagatacca g   21
366 <210> SEQ ID NO: 6
367 <211> LENGTH: 27
368 <212> TYPE: DNA
369 <213> ORGANISM: Artificial sequence
371 <220> FEATURE:
372 <223> OTHER INFORMATION: PCR primer
374 <400> SEQUENCE: 6
375 tcatctactc acttgggctc cgaattg   27
378 <210> SEQ ID NO: 7
379 <211> LENGTH: 11
380 <212> TYPE: PRT
381 <213> ORGANISM: Aspergillus niger
383 <400> SEQUENCE: 7
385 Phe Gln Asp Lys Pro Phe Thr Pro Asp His Arg
386 1   5   10
389 <210> SEQ ID NO: 8
390 <211> LENGTH: 4
391 <212> TYPE: PRT
392 <213> ORGANISM: Artificial sequence
394 <220> FEATURE:
395 <223> OTHER INFORMATION: Anticipated N-terminal sequence of oxalate decarboxylase of
396   Aspergillus niger
398 <400> SEQUENCE: 8
400 Tyr Gln Gln Asp
401 1
404 <210> SEQ ID NO: 9
405 <211> LENGTH: 385
406 <212> TYPE: PRT
407 <213> ORGANISM: Bacillus subtilis
409 <400> SEQUENCE: 9
411 Met Lys Lys Gln Asn Asp Ile Pro Gln Pro Ile Arg Gly Asp Lys Gly
412 1   5   10   15
415 Ala Thr Val Lys Ile Pro Arg Asn Ile Glu Arg Asp Arg Gln Asn Pro
416   20   25   30
419 Asp Met Leu Val Pro Pro Glu Thr Asp His Gly Thr Val Ser Asn Met
420   35   40   45
423 Lys Phe Ser Phe Ser Asp Thr His Asn Arg Leu Glu Lys Gly Gly Tyr
424   50   55   60
427 Ala Arg Glu Val Thr Val Arg Glu Leu Pro Ile Ser Glu Asn Leu Ala
428 65   70   75   80
431 Ser Val Asn Met Arg Leu Lys Pro Gly Ala Ile Arg Glu Leu His Trp
432   85   90   95
435 His Lys Glu Ala Glu Trp Ala Tyr Met Ile Tyr Gly Ser Ala Arg Val
436   100   105   110
439 Thr Ile Val Asp Glu Lys Gly Arg Ser Phe Ile Asp Asp Val Gly Glu
440   115   120   125
443 Gly Asp Leu Trp Tyr Phe Pro Ser Gly Leu Pro His Ser Ile Gln Ala

VERIFICATION SUMMARY   DATE: 02/04/2005
PATENT APPLICATION: **US/10/644,123A**   TIME: 07:26:31

Input Set : **D:\UF-314XC1.txt**
Output Set: **N:\CRF4\02042005\J644123A.raw**